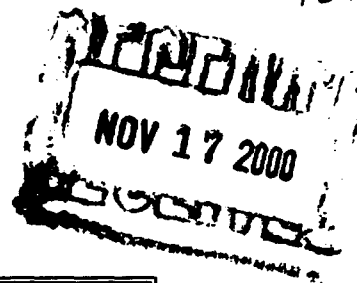


142976



ANALYTICAL REPORT

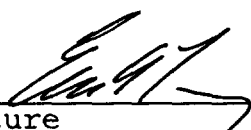
JOB NUMBER: 201020

Prepared For:

RMT
222 S. Riverside Plaza
Suite 820
Chicago, IL 60606

Attention: Rae Mindock

Date: 11/14/2000


Signature

Name: Eric A. Lang

Title: Project Manager


Date

2417 Bond Street
University Park, IL 60466

PHONE: (708) 534-5200
FAX.: (708) 534-5211

Severn Trent Laboratories Chicago
GC/MS VOA Case Narrative

RMT
Riverdale Chemical
Project #: 20000334
Job #: 201020

- 1) Unless noted below, the samples in this job were analyzed within the hold time specified in the applicable methods.
- 2) All Method Blank target compounds were below reporting limits.
- 3) The Laboratory Control Sample (LCS) were within recovery limits for the control compounds.
- 4) Matrix Spike/Matrix Spike Duplicate analyses was not performed in this sample set.
- 5) All of the volatile samples had surrogate recoveries within the in-house generated QC limits.
- 6) The samples were within the calibration criteria of the method and the applicable laboratory SOP. The low point in the initial calibration verifies the base reporting limits.
- 7) The sample 201020-1 had the last internal standard area below the 50% acceptance limits. The secondary dilution sample had all internal standard areas within the limits. Further corrective action was not required. All other internal standard areas and retention times were within acceptance limits as compared to the corresponding continuing calibration standard.
- 8) An initial analysis dilution based on a qualitative evaluation was performed using the low-level soil method on the sample 201020-1 (1/10). The other soil sample was analyzed without dilution using the low-level soil method. A secondary dilution for target compounds using the high level Methanol procedure was performed on the sample 201020-1 resulting in a 1/500 dilution factor. The soil results and reporting limits were adjusted to account for the analytical procedure, the dilutions performed and on a dry weight basis.


Gregory L. Goodwin
GC/MS Section Manager

11/14/2000

Date: 11/14/2000

Project Number.....: 20000334
Customer Project ID....: RIVERDALE CHEMICAL
Project Description....: Riverdale Chemical

Page 1

LABORATORY TEST RESULTS						
Job Number: 201020	Date: 11/14/2000					
CUSTOMER: RMT	PROJECT: RIVERDALE CHEMICAL	ATTN: Rae Mindock				
Customer Sample ID: DSL18 Date Sampled.....: 11/10/2000 Time Sampled.....: 10:30 Sample Matrix.....: Soil						
Laboratory Sample ID: 201020-1 Date Received.....: 11/10/2000 Time Received.....: 11:40						
TEST METHOD	PARAMETER/TEST DESCRIPTION	SAMPLE RESULT	REPORTING LIMIT	UNITS	DATE	TECH
8260B	Volatile Organics	ND	50	ug/Kg	11/10/00	glg
	Benzene	80	50	ug/Kg	11/10/00	glg
	Toluene					
8260B	Volatile Organics (5mL Purge)					
	Ethylbenzene	57000	1000	ug/Kg	11/14/00	glg
	Xylenes (total)	270000	1000	ug/Kg	11/14/00	glg

* In Description = Dry Wgt.

Job Number: 201020

Date: 11/14/2000

CUSTOMER: RMT

PROJECT: RIVERDALE CHEMICAL

ATTN: Rae Mindock

Customer Sample ID: DSL19
Date Sampled.....: 11/10/2000
Time Sampled.....: 10:35
Sample Matrix.....: Soil

Laboratory Sample ID: 201020-2
Date Received.....: 11/10/2000
Time Received.....: 11:40

* In Description = Dry Wgt.

Job Number.: 201020	QUALITY CONTROL RESULTS	Report Date.: 11/14/2000
---------------------	-------------------------	--------------------------

CUSTOMER: RMT		PROJECT: Riverdale Chemical		ATTN: Rae Mindock	
QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date Time

Test Method.....: 8260B	Units.....: ug/L	Analyst....: glg
Method Description.: Volatile Organics	Batch.....: 5963	

MB	Method Blank		5962		11/10/2000	2303
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Parameter/Test Description	QC Result	Q	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene	0								
Toluene	0								
Ethylbenzene	0								
Xylenes (total)	0								

LCS	Laboratory Control Sample	V00K10DSC	5962		11/11/2000	0005
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Parameter/Test Description	QC Result	Q	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene	40.4317			50.00		81		69-122	
Toluene	39.6438			50.00		79		70-124	
Ethylbenzene	39.3721			50.00		79		71-123	
Xylenes (total)	144.681			150.0		96		73-126	

Test Method.....: 8260B	Units.....: ug/L	Analyst....: glg
Method Description.: Volatile Organics	Batch.....: 5966	

MB	Method Blank		5965		11/10/2000	1159
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Parameter/Test Description	QC Result	Q	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene	0								
Toluene	0								

LCS	Laboratory Control Sample	V00K10DSC	5965		11/10/2000	1318
-----	---------------------------	-----------	------	--	------------	------

Parameter/Test Description	QC Result	Q	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Benzene	45.3552			50.00		91		69-122	
Toluene	44.8485			50.00		90		70-124	

Test Method.....: 8260B	Units.....: ug/L	Analyst....: glg
Method Description.: Volatile Organics (5mL Purge)	Batch.....: 5957	

MB	Method Blank		5955		11/13/2000	2131
----	--------------	--	------	--	------------	------

Parameter/Test Description	QC Result	Q	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Ethylbenzene	0								
Xylenes (total)	0								

Job Number.: 201020		QUALITY CONTROL RESULTS			Report Date.: 11/14/2000	
CUSTOMER: RMT		PROJECT: Riverdale Chemical			ATTN: Rae Mindock	
QC Type	Description	Reag. Code	Lab ID	Dilution Factor	Date	Time
LCS	Laboratory Control Sample	V00K13DSC	5955		11/13/2000	2239

Parameter/Test Description	QC Result	Q	QC Result	True Value	Orig. Value	Calc. Result	*	Limits	F
Ethylbenzene	51.4412			50.00		103		71-123	
Xylenes (total)	164.896			150.0		110		73-126	

Job Number.: 201020

SURROGATE RECOVERIES REPORT

Report Date.: 11/14/2000

CUSTOMER: RMT

PROJECT: RIVERDALE CHEMICAL

ATTN: Rae Mindock

Method.....: Volatile Organics (5mL Purge)
Method Code.....: 8260.5Batch.....: 5957
Analyst.....: glg

Surrogate	Units
1,2-Dichloroethane-d4 (surr)	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
5955		MB	1.00000	37.7208	50.00	75	43-139		11/13/2000	2131
5955		LCS	1.00000	49.8608	50.00	100	43-139		11/13/2000	2239
201020-1			5.00000	49.0872	50.00	98	43-139		11/14/2000	0028
201020-1			10.0000	45.5949	50.00	91	43-139		11/14/2000	0120

Surrogate	Units
4-Bromofluorobenzene (surr)	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
5955		MB	1.00000	39.7545	50.00	80	57-124		11/13/2000	2131
5955		LCS	1.00000	52.6486	50.00	105	57-124		11/13/2000	2239
201020-1			5.00000	50.1829	50.00	100	57-124		11/14/2000	0028
201020-1			10.0000	47.9830	50.00	96	57-124		11/14/2000	0120

Surrogate	Units
Dibromofluoromethane (surr)	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
5955		MB	1.00000	40.1285	50.00	80	64-132		11/13/2000	2131
5955		LCS	1.00000	54.6989	50.00	109	64-132		11/13/2000	2239
201020-1			5.00000	50.9958	50.00	102	64-132		11/14/2000	0028
201020-1			10.0000	47.2963	50.00	95	64-132		11/14/2000	0120

Surrogate	Units
Toluene-d8 (surr)	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
5955		MB	1.00000	40.3935	50.00	81	70-128		11/13/2000	2131
5955		LCS	1.00000	52.9301	50.00	106	70-128		11/13/2000	2239
201020-1			5.00000	49.6368	50.00	99	70-128		11/14/2000	0028
201020-1			10.0000	48.5956	50.00	97	70-128		11/14/2000	0120

Job Number.: 201020

SURROGATE RECOVERIES REPORT

Report Date.: 11/14/2000

CUSTOMER: RMT

PROJECT: RIVERDALE CHEMICAL

ATTN: Rae Mindock

Method.....: Volatile Organics
Method Code.....: 8260Batch.....: 5963
Analyst.....: glg

Surrogate	Units
1,2-Dichloroethane-d4 (surr)	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
5962		MB	1.00000	48.8219	50.00	98	43-139		11/10/2000	2303
5962		LCS	1.00000	48.3728	50.00	97	43-139		11/11/2000	0005
201020-2			1.00000	47.7602	50.00	96	43-139		11/11/2000	0139

Surrogate	Units
4-Bromofluorobenzene (surr)	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
5962		MB	1.00000	52.4912	50.00	105	57-124		11/10/2000	2303
5962		LCS	1.00000	51.1592	50.00	102	57-124		11/11/2000	0005
201020-2			1.00000	47.0596	50.00	94	57-124		11/11/2000	0139

Surrogate	Units
Dibromofluoromethane (surr)	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
5962		MB	1.00000	49.3805	50.00	99	64-132		11/10/2000	2303
5962		LCS	1.00000	50.1300	50.00	100	64-132		11/11/2000	0005
201020-2			1.00000	50.6865	50.00	101	64-132		11/11/2000	0139

Surrogate	Units
Toluene-d8 (surr)	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
5962		MB	1.00000	50.8700	50.00	102	70-128		11/10/2000	2303
5962		LCS	1.00000	50.5626	50.00	101	70-128		11/11/2000	0005
201020-2			1.00000	48.5215	50.00	97	70-128		11/11/2000	0139

Job Number.: 201020

SURROGATE RECOVERIES REPORT

Report Date.: 11/14/2000

CUSTOMER: RMT

PROJECT: RIVERDALE CHEMICAL

ATTN: Rae Mindock

Method.....: Volatile Organics
Method Code.....: 8260Batch.....: 5966
Analyst.....: glg

Surrogate	Units
1,2-Dichloroethane-d4 (surr)	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
5965		MB	1.00000	50.2565	50.00	101	43-139		11/10/2000	1159
5965		LCS	1.00000	45.7036	50.00	91	43-139		11/10/2000	1318
201020-1			10.0000	43.3663	50.00	87	43-139		11/10/2000	1856

Surrogate	Units
4-Bromofluorobenzene (surr)	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
5965		MB	1.00000	50.7786	50.00	102	57-124		11/10/2000	1159
5965		LCS	1.00000	48.5820	50.00	97	57-124		11/10/2000	1318
201020-1			10.0000	43.6940	50.00	87	57-124		11/10/2000	1856

Surrogate	Units
Dibromofluoromethane (surr)	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
5965		MB	1.00000	51.5715	50.00	103	64-132		11/10/2000	1159
5965		LCS	1.00000	47.7946	50.00	96	64-132		11/10/2000	1318
201020-1			10.0000	48.4395	50.00	97	64-132		11/10/2000	1856

Surrogate	Units
Toluene-d8 (surr)	ug/L

Lab ID	Matrix	QC Type	Dilution	Result	True Value	Percent Recovery	Limits	Flag	Date	Time
5965		MB	1.00000	50.1427	50.00	100	70-128		11/10/2000	1159
5965		LCS	1.00000	47.6206	50.00	95	70-128		11/10/2000	1318
201020-1			10.0000	48.2876	50.00	97	70-128		11/10/2000	1856

Job Number: 201020

L A B O R A T O R Y C H R O N I C L E

Date: 11/14/2000

CUSTOMER: RMT

PROJECT: RIVERDALE CHEMICAL

ATTN: Rae Mindock

Lab ID: 201020-1 Client ID: DSL18

Date Recvd: 11/10/2000 Sample Date: 11/10/2000

METHOD	DESCRIPTION	RUN#	BATCH#	PREP #	DATE/TIME ANALYZED	DILUTION
5030 Soil(5g)	5030 Soil(5g)Prep	1	5965		11/10/2000 1856	
5030 Soil(5g)	5030 Soil(5g)Prep	2	5955		11/14/2000 0120	
5030 Soil(5g)	5030 Soil(5g)Prep	3	5955		11/14/2000 0028	
82608	Volatile Organics	1	5966	5965	11/10/2000 1856	10.0000
82608	Volatile Organics (5mL Purge)	1	5957	5955	11/14/2000 0120	10.0000

Lab ID: 201020-2 Client ID: DSL19

Date Recvd: 11/10/2000 Sample Date: 11/10/2000

METHOD	DESCRIPTION	RUN#	BATCH#	PREP #	DATE/TIME ANALYZED	DILUTION
5030 Soil(5g)	5030 Soil(5g)Prep	1	5962		11/11/2000 0139	
82608	Volatile Organics	1	5963	5962	11/11/2000 0139	1.00000

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 11/14/2000

REPORT COMMENTS

- 1) The results presented in this report relate only to the analytical testing and condition of sample at receipt. This report pertains to only those samples actually tested. All pages of this report are integral parts of the analytical data. Therefore, this report should be reproduced only in its entirety.
- 2) Soil, sediment and sludge sample results are reported on a "dry weight" basis except when analyzed for landfill disposal or incineration parameters. All other solid matrix samples are reported on an "as received" basis unless noted differently.
- 3) Reporting limits are adjusted for preparation sample size, sample dilutions and moisture content if analyzed on a dry weight basis.
- 4) The test results for the noted analytical method(s) meet the requirements of NELAC and the Illinois EPA Rules and Regulations Part 186, where applicable.

IEPA Certification ID# 100201

NY Certification ID# 11006

- 5) According to 40CFR Part 136.3, pH, Sulfite, Chloride Residual and Dissolved Oxygen analyses are to be performed immediately after aqueous sample collection. When these parameters are not indicated as field (e.g., pH Field) they were not analyzed immediately, but as soon as possible on laboratory receipt.

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 11/14/2000

Glossary of flags, qualifiers and abbreviation

Inorganic Qualifiers

- U Analyte was not detected at or above the reporting limit.
- < Not detected at or above the reporting limit.
- J Result is less than the RL, but greater than or equal to the method detection limit.
- B CLP: Result is less than the CRDL, but greater than or equal to the instrument detection limit.
- S Result was determined by the Method of Standard Additions.

Inorganic Flags

- ICV, CCV, ICB, CCB, ISA, ISB, CRI, CRA, MRL: Instrument related QC exceed the upper or lower control limits.
- H MB, EB: Batch QC is greater than reporting limit or had a negative instrument reading lower than the absolute value of the reporting limit.
- * LCS, LCD, MSD, MD, PS, PSD: Batch QC exceeds the upper or lower control limits.
- N MS, MSD: Spike recovery exceeds the upper or lower control limits.
- 4 MS, MSD: The analyte present in the original sample 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
- E SD: Serial dilution exceeds the control limits.
- W PS: Post-digestion spike was outside 85-115% control limits.
- + MSA correlation coefficient is less than 0.995.

Organic Qualifiers (Q - Column)

- U Analyte was not detected at or above the reporting limit.
- ND Compound not detected.
- J/B Result is an estimated value below the reporting limit or a tentatively identified compound (TIC).
- M Manually integrated compound.
- Q Result was qualitatively confirmed, but not quantified.
- I Indicates the presence of an interference.
- C Pesticide identification was confirmed by GC/MS.
- Y The chromatographic response resembles a typical fuel pattern.
- Z The chromatographic response does not resemble a typical fuel pattern.
- E Result exceeded calibration range, secondary dilution required.

Organic Flags (Flags Column)

- MB, EB, MLE: Batch QC is greater than reporting limit.
- * LCS, LCD, CCV, MS, MSD, Surrogate, RS: Batch QC exceeds the upper or lower control limits.
- A Concentration exceeds the instrument calibration range or below the reporting limit.
- B Compound was found in the blank and sample.
- D Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
- H Alternate peak selection upon analytical review
- I Indicates the presence of an interference, recovery is not calculated.
- P The lower of the two values is reported when the percent difference between the results of two GC columns is greater than 25%.

QUALITY ASSURANCE METHODS

REFERENCES AND NOTES

Report Date: 11/14/2000

Abbreviations

Batch	Designation given to identify a specific extraction, digestion, preparation set, or analysis set
CAP	Capillary Column
CCB	Continuing Calibration Blank
CCV	Continuing Calibration Verification
Contract	Contract laboratory identification code
CRA	Low Level Standard Check - GFAA; Mercury
CRI	Low Level Standard Check - ICP
Dil Fac	Dilution Factor
DL	Secondary dilution was performed
DL Fac	Detection Limit Factor
DSH	Distilled Standard - High Level
DSL	Distilled Standard - Low Level
DSM	Distilled Standard - Medium Level
EB	Extraction Blank
ICB	Initial Calibration Blank
ICV	Initial Calibration Verification
IDL	Instrument Detection Limit
ISA	Interference Check Sample A
ISB	Interference Check Sample B
Job No.	The first six digits of the sample ID which refers to a specific client, project and sample group
Lab ID	An 8 number unique laboratory identification
LCD	Laboratory Control Standard Duplicate
LCS	Laboratory Control Standard with reagent grade water or a matrix free from the analyte of interest
MB	Method Blank or (PB) Preparation Blank
MD	Method Duplicate
MDL	Method Detection Limit
MLE	Medium Level Extraction Blank
MRL	Method Reporting Limit Standard
MSA	Method of Standard Additions
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not Detected
PACK	Packed Column
PREPF	Calculation factor used by the Laboratory's Information Management System (LIMS)
PS	Post Spike
PSD	Post Spike Duplicate
RA	Re-analysis
RE	Re-extraction and analysis
RL	Reporting Limit
RPD	Relative Percent Difference of duplicate (unrounded) analyses
RRF	Relative Response Factor
RS	Reference Standard
RT	Retention Time
RTW	Retention Time Window
SampleID	A 9 digit number unique for each sample, the first six digits are referred as the job number
SCB	Seeded Control Blank
SD	Serial Dilution
UCB	Unseeded Control Blank

NOTES

One or a combination of these data qualifiers and abbreviations may appear in the analytical report.



STL Chicago
2417 Bond Street
University Park, IL 60466
Phone: 708-534-5200
Fax: 708-534-5211

Report To:

Bill To:

Shaded Areas For Internal Use Only of

Contact: M. WOOD
Company: INT
Address: 222. TUESDAY
STE 810
Phone: 678-1111
Fax: 312-575-0300
E-Mail: Rae.Mindock@int.com

Contact: _____
Company: _____
Address: _____
Phone: _____
Fax: _____
PO#: _____ Quote: _____

Lab Lot# 241020
Package Sealed Yes No Samples Sealed Yes No
Received on Ice Yes No Samples Intact Yes No
Temperature °C of Cooler uncontrolled

Sampler Name: <u>M. WOOD</u>		Signature: <u>[Signature]</u>		Refrg #																Within-Hold Time (Yes) <u>No</u> (No) <u>NA</u>		Preserv. Indicated (Yes) <u>No</u> (No) <u>NA</u>	
Project Name: <u>RIVERDALE</u>		Project Number: <u>186201</u>		Volume		<u>204.40</u>														pH Check OK (Yes) <u>No</u> (No) <u>NA</u>		Res Cl ₂ Check OK (Yes) <u>No</u> (No) <u>NA</u>	
Project Location: <u>CHICAGO</u>		Date Required		Preserv		<u>None</u>														Sample Labels and COC Agree (Yes) <u>No</u> (No) <u>NA</u>		COC not present	
Lab PM: <u>M. WOOD</u>		Hard Copy: <u>ASAP</u>		Matrix		Comp/Grab														Additional Analyses / Remarks			
Laboratory ID	MS-MSD	Client Sample ID	Date	Time																			
1		DSL18	11/10	10 ³⁰	S	G	X																
2		DSL19	11/10	10 ³⁰	S	G	X																
		DSL20	11/10	10 ³⁰	S	G	X																

RELINQUISHED BY <u>[Signature]</u> COMPANY <u>INT</u> DATE <u>11/10</u> TIME <u>11:30</u>	RECEIVED BY <u>[Signature]</u> COMPANY <u>INT</u> DATE <u>11/10</u> TIME <u>11:30</u>
RELINQUISHED BY _____ COMPANY _____ DATE _____ TIME _____	RECEIVED BY _____ COMPANY _____ DATE _____ TIME _____

Matrix Key WW = Wastewater W = Water S = Soil SL = Sludge MS = Miscellaneous OL = Oil A = Air SE = Sediment SO = Solid DS = Drum Solid DL = Drum Liquid L = Leachate WI = Wipe O = _____	Container Key 1. Plastic 2. VOA Vial 3. Sterile Plastic 4. Amber Glass 5. Widemouth Glass 6. Other	Preservative Key 1. HCl, Cool to 4° 2. H2SO4, Cool to 4° 3. HNO3, Cool to 4° 4. NaOH, Cool to 4° 5. NaOH/Zn, Cool to 4° 6. Cool to 4° 7. None	COMMENTS <u>[Signature]</u>	Date Received <u>11/10/00</u> Courier: <u>[Signature]</u> Hand Delivered <input type="checkbox"/> Bill of Lading <u>[Signature]</u>
---	---	---	--------------------------------	---